

MODELS G 13SC2/G 15SA2

1. PRECAUTIONS IN DISASSEMBLY AND REASSEMBLY

The **[Bold]** numbers in the descriptions below correspond to the item numbers in the Parts List and exploded assembly diagram for G 13SC2 and the **<Bold>** numbers to those in the Parts List and exploded assembly diagram for G 15SA2.

1-1. Disassembly of the Armature Ass'y

- (1) Loosen the Screw M5 x 20 **[29]** **<29>**, and remove the Wheel Guard Ass'y **[31]** **<31>**.
- (2) Loosen the two Brush Caps **[47]** **<47>**, and take out the Carbon Brushes **[48]** **<48>**.
- (3) Remove the four Tapping Screws D5 x 30 **[2]** **<2>**.
The Armature Ass'y' **[15]** **<15>** can then be taken out simultaneously with the Gear Cover Ass'y **[5]** **<5>**, Packing Gland **[27]** **<27>**, and related parts.
- (4) Remove the four Seal Lock Screws M5 x 14 **[28]** **<28>**, and remove the Packing Gland **[27]** **<27>**, and related parts.
- (5) After removing in the three Seal lock Screws M4 x 10 **[1]** **<1>**, the Armature Ass'y **[15]** **<15>** can be extracted together with the Bearing Cover (B) **[14]** **<14>**, and related parts.
- (6) Carefully wrap the Armature Ass'y **[15]** **<15>** with a soft, clean rag to protect it from being damaged, and clamp it securely in a vise. Then remove the M8 Lock Nut **[6]** **<6>**, and extract the Pinion **[7]** **<7>**.
- (7) As illustrated in Fig. 3, the Ball Bearing **[11]** **<11>** can be removed from the Armature Ass'y **[15]** **<15>** by utilizing a J-204 Bearing Puller (special repair tool, Code No.970982).
After the Ball Bearing has been removed, the Bearing Cover (B) **[14]** **<14>** can be easily taken off.

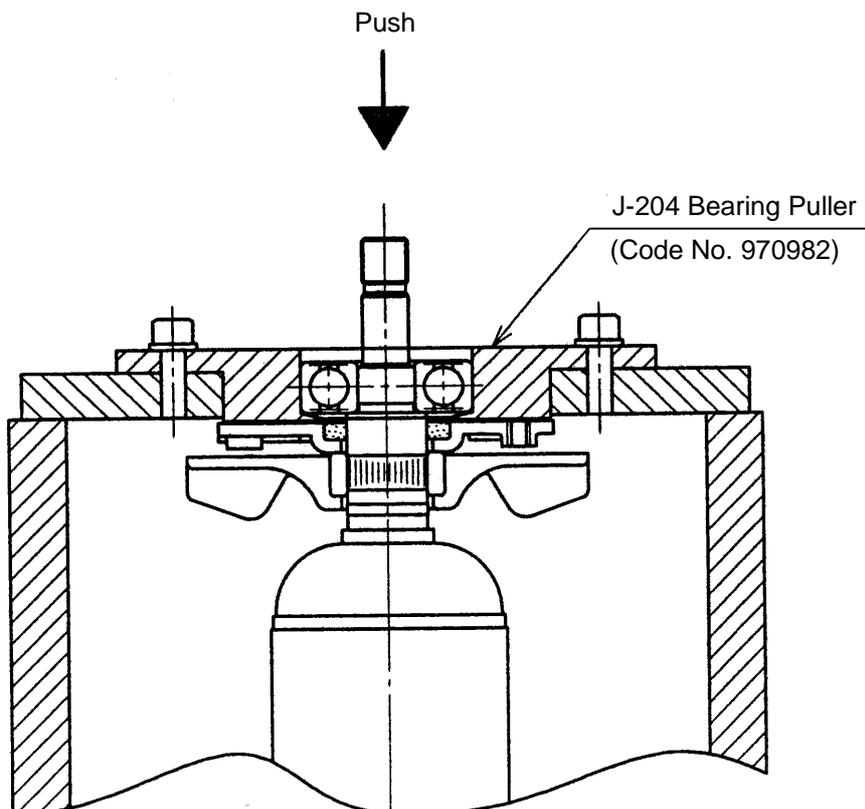


Fig. 3

1-2. Disassembly of the Stator Ass'y

- (1) After taking out the Armature Ass'y [15] <15>, loosen the four Tapping Screws D5 x 20 [62] <60>, and the two Tapping Screws D4 x 20 [63] <61> and remove the Handle (A) [60] <58>, Handle (B) [61] <59>.
- (2) Disconnect the lead wires of the Stator Ass'y [38] <38> from the Trigger Switch [56] <55>. Then, disconnect the lead wires of the Noise Suppressor [57], and the Connector for [54] <54> or the Pillar Terminal [53] <53>.
- (3) Disconnect the Brush Terminal Ass'ys [39] <39> from the Brush Holders [49] <49> and take out Bearing Bushing [45] <45>.
- (4) Finally, loosen the two Hexagon Hd. Tapping Screws D5 x 60 [37] <37>, and the Stator Ass'y [38] <38> can be taken out of the Housing Ass'y [41] <41>. If the Stator Ass'y [38] <38> cannot be easily taken out of the Housing Ass'y [41] <41>, disassembly can be facilitated by heating the Housing Ass'y to a temperature of approximately 60 °C (140 °F) with an appropriate heating device.

1-3. Disassembly of the Gear

- (1) Loosen the four Seal Lock Screws M5 x 14 [28] <28>, and remove the Packing Gland [27] <27> together with the Spindle [24] <24>, and Gear [19] <19> from the Gear Cover Ass'y [5] <5> as a unit.
- (2) When it is necessary to remove the Gear [19] <19> from the Spindle [24] <24>, it is highly recommended that the special repair tools described below be utilized.

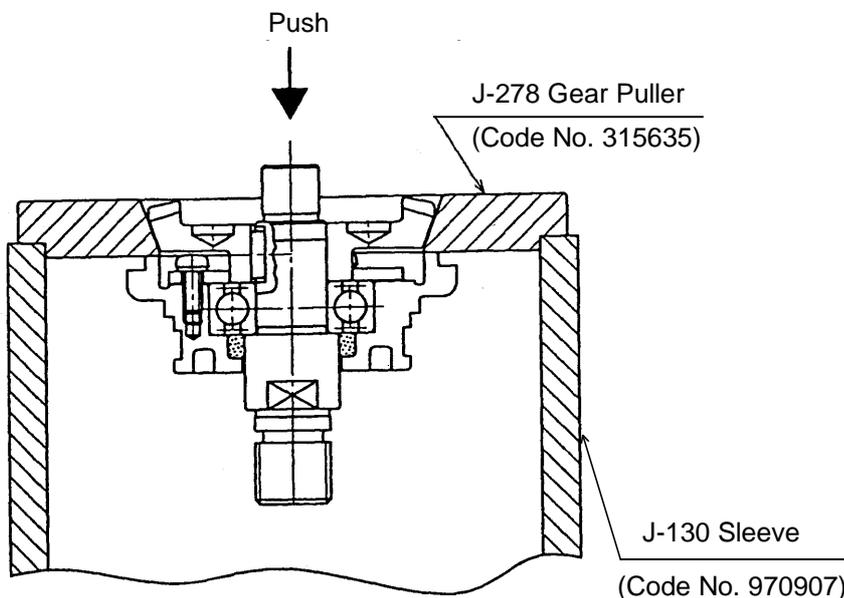


Fig. 4

As illustrated in Fig. 4, support the angled surface of the Gear [19] <19> with a J-278 Gear Puller (special repair tool, Code No. 315635), rest the J-278 Gear Puller on the J-130 Sleeve (special repair tool, Code No. 970907), and push down on the tip of the Spindle [24] <24> with a hand press to remove the Gear [19] <19>.

1-4. Reassembly

Perform reassembly in the reverse order of disassembly while observing the given precautions and taking care of the following points.

- (1) After disassembly, thoroughly remove old grease from the inside of the Gear Cover Ass'y [5] <5>, and insert 25 g of new grease (Nippeco JF-375, Code No.930036, is recommended.) prior to reassembly. When inserting grease, apply it to the pinion gear teeth surfaces, and to the needle bearing inside the gear cover.

(2) When replacing the ball bearing on the commutator side of the Armature Ass'y [15] <15>, be very careful to ensure that the Dust Seal [40] <40> is assembled in the proper direction. The Dust Seal [40] <40> plays an important role in dustproofing of the Ball Bearing, and must be replaced with a new one if disassembled.

(3) Apply Three Bond TB 1406 Screw Locking Agent to the following screws.

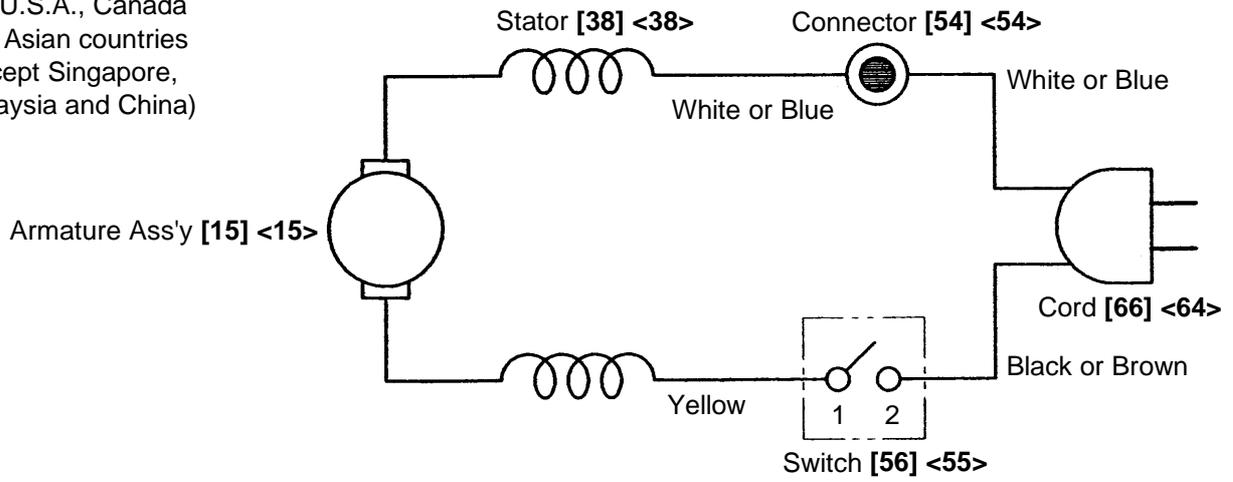
- * Three Seal Lock Screws M4 x 10 [1] <1> which fix Bearing Cover (B) [14] <14> in place.
- * Three Seal Lock Screws M4 x 10 [20] <20> which fix Bearing Cover (A) [21] <21> in place.
- * Four Seal Lock Screws M5 x 14 [28] <28> which fix Packing Gland [27] <27> in place.

1-5. Tightening Torque

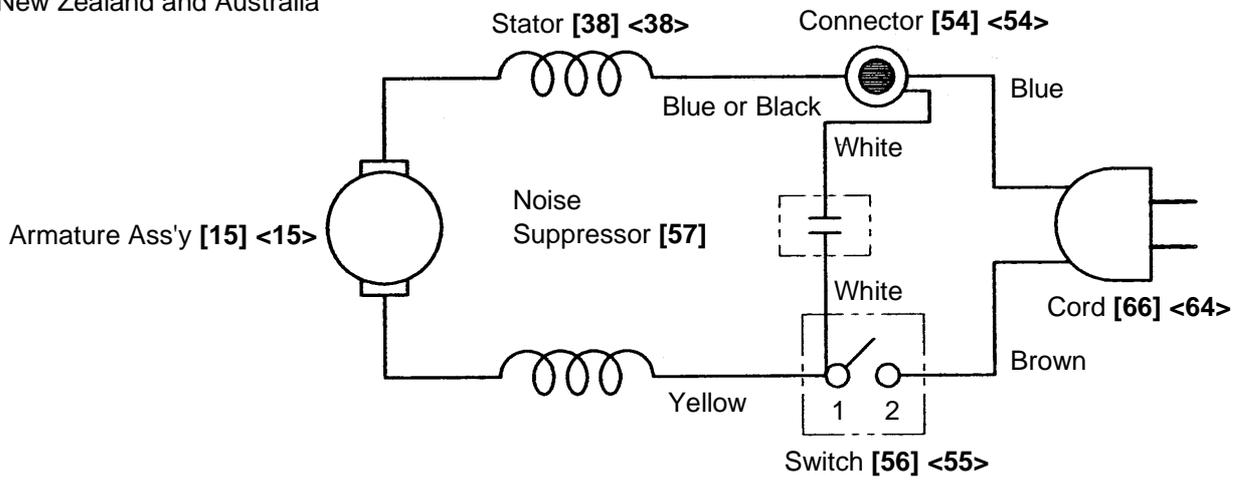
D4 Tapping Screw (W/Flange) [58] <56> [63] <61> [51] <51>	2.0 ± 0.5 Nm (20 ± 5 kgfcm, 1.5 ± 0.4 ft-lbs)
D5 Tapping Screw [62] <60> [2] <2>	}
D5 Hex. Tapping Screw [37] <37>		
M4 Seal Lock Screw (W/Sp. Washer) [20] <20> [1] <1>	1.8 ± 0.4 Nm (18 ± 4 kgfcm, 1.3 ± 0.3 ft-lbs)
M5 Seal Lock Screw (W/Sp. Washer) [28] <28>	3.4 ± 0.7 Nm (35 ± 7 kgfcm, 2.5 ± 0.5 ft-lbs)
M8 Lock Nut [6] <6>	13.7 ± 2.0 Nm (140 ± 20 kgfcm, 10.1 ± 1.5 ft-lbs)

1-6. Wiring Diagrams

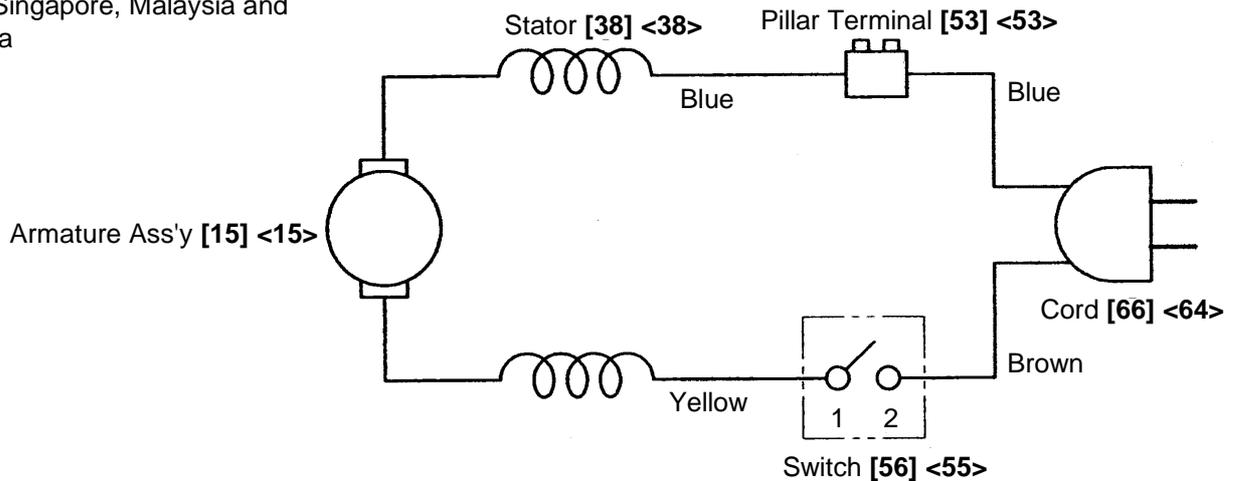
For U.S.A., Canada
and Asian countries
(except Singapore,
Malaysia and China)



For New Zealand and Australia



For Singapore, Malaysia and
China



1-7. Insulation Tests

On completion of reassembly after repair measure the insulation resistance and conduct the dielectric strength test.

Insulation resistance : 7 MΩ or more with DC 500 V megohm tester

Dielectric strength : AC 4,000 V for 1 minute, with no abnormalities.....220 V - 240 V

AC 2,500 V for 1 minute, with no abnormalities.....110 V - 127 V

1-8. Gear Backlash Value

Gear backlash should be maintained at a value of 2 mm or less measured at the outer edge of a fresh depressed center wheel.

1-9. No-Load Current Values

After no-load operation for 30 minutes, the no-load current value should be as follows :

Voltage (V)	110	115	220	230	240
Current (A) max.	5.5	6.0	3.0	3.0	3.0

2. STANDARD REPAIR TIME (UNIT) SCHEDULES

MODEL	Variable		10	20	30	40	50	60 min.
	Fixed							
G 13SC2 G 15SA2	General Assembly	Work Flow						
		Wheel Guard Ass'y				Housing Ass'y Stator Ass'y		
		Pinion Armature Ass'y Gear Cover Ass'y Seal Ring (A) Washer (A) Washer (B) Ball Bearing (6200DDUCM) Rubber Ring (A) Felt Packing (B) Bearing Cover (B) Dust Seal Ball Bearing (608VVMC2)						
		Pushing Button Lock Pin Gear Ass'y Seal Packing			Bearing Cover (A) Ball Bearing (6202DDUCM) Felt Packing (A)			
Handle (A) Handle (B) Carbon Brush x 2 Switch Cord Cord Armor		Brush Holder x 2		Packing Gland Spindle Feather Key (3 x 3 x 10)				